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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jonathan T. Foote

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07/26/2006

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/989,638	Applicant(s) FOOTE, JONATHAN T.	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-29 is/are pending in the application.
 4a) Of the above claim(s) 9-21 and 24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-8,22 and 23 is/are allowed.
- 6) ☒ Claim(s) 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/09/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1-8, 23 and linking claim 22 in the reply filed on 11/30/2005 is acknowledged.

2. Claims 9-21 and 24 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 11/30/2005.

Response to Arguments

3. Applicant's arguments, see Amendment, filed on 05/09/2006, with respect to claim 8 and newly added claims 25-29 have been fully considered and are persuasive. Therefore, the rejection of claim 8 has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kumar et al. (US 5,963,664) and Hsieh et al. (US 6,011,558) for newly added claims 25-29. Since the subject matter of new independent claim 25 includes subject matter of original claims 1 and 8, this Office action is made as a non-final rejection.

Claim Objections

4. Claims 1, 2, 4-8, 22-23 are objected to because of the following informalities:

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Claim 1 (line 12), “a lowest of said plurality of disparity differences” should be changed to --a lowest disparity of difference--.

Claim 2 (line 2) recites limitation “shifting said first image a first distance with respect to said second image,” which is already recited in claim 1 (line 14).

Claim 22 (line 14), “said second difference” should be changed to --said second image--.

Claim 23 (line 2) recites limitation “shifting said first image a first distance,” which is already recited in claim 22 (line 14).

Claims 2, 4-8 are objected as being dependent on claim 1.

Claim 23 is objected as being dependent on claim 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 25-29 are rejected over Kumar et al. (US 5,963,664) in view of Hsieh et al. (US 6,011,558).

Regarding claim 25, Kumar et al. discloses a method for combining at least a portion of a plurality of images, comprising the steps of:

obtaining a first image and a second image, wherein at least a portion of said first image and said second image include a common field of view (camera 104₁ obtains first image, camera 104₂ obtains second image, first and second images have a common field of view, figure 1, column 4, line 56 to column 5, line 17),

adjusting at least a portion of said first image to reduce an image disparity between said common field of view of said first image and said second image (image processing system 100, figures 1-2, 6, column 9, line 65 to column 10, line 24);

combining at least a portion of said first image and at least a portion of said second image subsequent to said step of adjusting (image processing system 100, figure 1, column 4, line 56 to column 5, line 17).

Kumar et al. fails to specifically disclose the step of cross-fading said common field of view of said first image and said second image. However, Hsieh et al. teaches an intelligent stitcher for panoramic image-based virtual worlds which includes a blending engine for blending (cross-fading) intensity values of pixels of the first warped image with corresponding pixels of the second image, thereby blending intensity values of the common overlapping areas between the first and the second (column 3, lines 27-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Kumar et al. by the teaching of Hsieh et al. et al. in order to blend intensity values of the common overlapping areas between the first and the second. In this way, intensity discontinuities between matched pixels are smoothed (column 3, lines 32-37).

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Regarding claim 26, Kumar et al. discloses adjusting said second image to reduce said image disparity between said common field of view of said first image and said second image (reduce the residual displacement between two images, figure 4, column 8, lines 20-67).

Regarding claim 27, Kumar et al. discloses the step of adjusting said second image includes shifting said second image a second distance (image processing system 100 combines images and provides image alignment, column 5, lines 10-15, column 9, line 65 to column 10, lines 24; this indicates that the image processing system 100 adjusts said second image includes shifting said second image a second distance).

Regarding claim 28, Kumar et al. discloses said second distance is a distance where the image disparity is reduced (reduce the residual displacement between two images, figure 4, column 8, lines 35-51).

Regarding claim 29, Kumar et al. discloses warping said first image and said second image into a common coordinate system of a composite image subsequent to said step of obtaining (warping process, figure 3, column 5, line 63 to column 6, line 25).

Allowable Subject Matter

7. Claims 1, 2, 4-8, 22-23 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 22, the prior art of the record fails to show or fairly suggest an apparatus for producing a panoramic video, comprising an image adjustor, wherein the image adjustor is

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adapted to determine a plurality of disparity differences between at least a portion of the first image and the second image, each disparity difference corresponding to a distance of adjustment of the first image with respect to the second image; select a distance corresponding to a lowest disparity difference in said plurality of disparity differences as a first distance; and shift the first image said first distance with respect to said second image, in combination with other claim limitations.

Claim 23 is allowable for the reason given in claim 22.

Claim 1 is a method claim of apparatus claim 22. Therefore, claim 1 is allowable for the reason given in claim 22.

Claims 2, 4-8 are allowable for the reason given in claim 1.

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
7/20/06


LUONG T. NGUYEN
PATENT EXAMINER